REMARKS

This Amendment and Response is submitted in response to the Office Action, mailed May 3, 2005 (Office Action). A check for $1020 for the fee for a three-month extension of time accompanies this response. Any fees that may be due in connection with the filing of this paper or with this application may be charged to Deposit Account No. 06-1050. If a Petition for Extension of Time is needed, this paper is to be considered such Petition.

Claims 1-30, 37-42, 45, 46, 49-51, 56-72 and 75-77 are pending. Claims 32-36, 43, 44, 47, 48, 52-55, 74, 74 and 80-107 are cancelled without prejudice or disclaimer. Applicant expressly reserves the right to pursue the cancelled subject matter in a continuing application. Claims 1-7, 9, 11-18, 20, 21, 23-31, 39, 41, 45, 49-51, 56-58, 60-72 and 76 are amended to recite more conventional claim language and to more distinctly claim the subject matter. Support for the amendment is found throughout the specification and, in particular, in the respective claims as originally filed.

Claims 1, 41, 42, 50, 51, 58 and 77 are amended to remove certain formulae and substituents in the definitions. Support for the amendment can be found throughout the specification, for example at page 17, line 8 through page 27, line 1 and in the claims as originally filed. Applicant expressly reserves the right to pursue the cancelled subject matter in a continuing application. Claims 56 and 57 are amended to be independent claims. No new matter has been added by reason of these amendments.

Informalities

Incorporation By Reference

The Examiner maintains the previous objection to the incorporation by reference of certain material in the specification (Office Action at page 2). Specifically, the Examiner alleges "anything incorporated by reference outside of the Background portion of the disclosure is assumed to be part of the invention and must be essential" (Office Action, page 3). The Examiner alleges that references at page 110, line 22 and at page 111, lines 25-26 describing the "co-transfection assay" constitute essential material. This rejection is respectfully traversed.

As pointed out in the previous Response, filed February 2, 2005, incorporation by reference of "essential material" and "nonessential material" is discussed in the MPEP at MPEP § 608.01(p)(I). For example, MPEP § 608.01(p)(I)(A) states:

> "Essential material" is defined as that which is "necessary to (1) describe the claimed invention, (2) provide an enabling disclosure of the claimed invention, or (3) describe the best mode (35 U.S.C. 112)" ...

In addition, Applicant respectfully submits that § 1.57(c) of the Patent Rules, directed to Incorporation by reference, defines "essential material" as material that is necessary to:

> (1) Provide a written description of the claimed invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and set forth the best mode contemplated by the inventor of carrying out the invention as required by the first paragraph of 35 U.S.C. 112;
>
> (2) Describe the claimed invention in terms that particularly point out and distinctly claim the invention as required by the second paragraph of 35 U.S.C. 112; or
>
> (3) Describe the structure, material, or acts that correspond to a claimed means or step for performing a specified function as required by the sixth paragraph of 35 U.S.C. 112.

All other material is considered "nonessential material" (see paragraph (d)). Nonessential subject matter is subject matter referred to for purposes of indicating the background of the invention or illustrating the state of the art. MPEP § 608.01(p)(I) also states that

> Nonessential subject matter may be incorporated by reference to (1) patents or applications published by the United States or foreign countries or regional patent offices, (2) prior filed, commonly owned U.S. applications, or (3) non-patent publictions....

The references objected to by the Examiner are Evans *et al.* on page 110, line 22, US Pat. Nos. 4,981,784 and 5,071,773 to Evans *et al.* on page 110, lines 25-26 and Berger *et al.* on page 111, lines 8-9. These references describe a co-transfection assay that mimics an *in vivo* system in the laboratory. None of the instant claims is directed to a co-transfection assay; the claims are directed to compounds and compositions. Assays are not claimed; nor is a particular assay required. Those of skill in the art can use any of a variety of known assays. The material incorporated by reference evidences this. Thus, the material incorporated by reference does not describe the "claimed invention" under MPEP § 608.01(p)(I)(A).

In addition, as previously submitted, the application describes the co-transfection assay and provides sufficient detail to allow one of skill in the art to practice the assay. The Examiner's attention is directed to the Biological Examples section of the application on page 110, line 20 through page 114, line 5. For example, Example B of the Biological Examples section, page 112, line through page 114, line, entitled Co-transfection assay, provides a detailed description of the assay. Hence, the material incorporated by reference is not required to provide an enabling disclosure, nor to describe the best mode (35 U.S.C. 112). Since the material incorporated by reference describes the state of the art and is not encompassed by the definition of "essential material" as set forth under MPEP § 608.01(p)(I)(A) or § 1.57(c) of the

Patent Rules, applicant respectfully submits that it is nonessential subject matter, under the definitions as set forth in § 1.57(c)-(d) of the Patent Rules.

In the Office Action, the Examiner states that "[t]he rule being advanced is that anything incorporated by reference outside of the Background portion of the disclosure is assumed to be part of the invention and must be essential" (Office Action at page 3). The Examiner suggests moving the passages containing incorporation by reference to the Background section in order to satisfy this "rule" (*Id*). Applicant is aware of no such "rule" and respectfully requests that the Examiner cite authority for it. The Examiner's attention is directed to § 1.57(b) of the Patent Rules, Incorporation by Reference, which states:

> (b) Except as provided in paragraph (a) of this section, an incorporation by reference must be set forth **in the specification** and must:
> (1) Express a clear intent to incorporate by reference by using the root words "incorporat(e)" and "reference" (e.g., "incorporate by reference"); and
> (2) Clearly identify the referenced patent, application, or publication. [emphasis added]

Under this Rule, an incorporation by reference must be set forth in the specification. There is no indication that all incorporations by reference outside of the Background section are to be deemed "essential subject matter."

A purpose for allowing material to be incorporated by reference is to minimize unnecessary bulk of patent application specifications. *See General Electric Co. v. Brenner,* 159 U.S.P.Q. 338 (D.C. Cir. 1968) (famously lamenting that "[f]iling cabinets abhor redundancy. Warehouses covet their space . . ."). Redundancy, whether in the background section or any other portion of the specification, may be avoided by incorporation by reference. The passage at issue describes an assay that can be used to characterize the subject matter, but which is not claimed. This is precisely the sort of information that can be incorporated by reference to avoid unwieldy applications. It also is appropriate to include the body of the specification in the section related to such assays where it assists the reader, rather than in the Background section as the Examiner insists.

Applicant further notes that the Examiner alleges that "Applicant's response also suggests that applicant presumes the right to determine for the USPTO what references are 'essential' and what references are not" (Action at page 3). Applicant acknowledges that the Office has "considerable discretion in determining what may or may not be incorporated by reference in a patent application" (MPEP § 608.01(p) (I)). Applicant must be fully responsive to an Office Action. Applicant respectfully submits that the traverse of the

objection included an analysis of incorporation by reference using the Patent Office's own rules as set forth in MPEP § 608.01(p)(I).

REJECTION OF CLAIMS 1-55, 58-77 AND 80-107 UNDER 35 U.S.C. § 112, FIRST PARAGRAPH – SCOPE

Claims 1-55, 58-77 and 80-107 are rejected under 35 U.S.C. § 112, first paragraph as allegedly containing subject matter that was not described in the specification in such a way as to enable one of skill in the art to make and/or use the claimed subject matter because the scope is allegedly excessive in view of the disclosed exemplifications. The Examiner alleges that because the specification provides "only about 150 compounds" in the Examples section that the disclosure cannot be enabling for the entire scope of claimed compounds. The Examiner also alleges that some compounds that are encompassed by the claims are not "disclosed as having been synthesized within the examples," that none of the exemplary compounds discloses "a structure with the multiple layers of substituents on top of substituents provided by the claims" and that none of the examples "provides a complete description of how to make same."

Applicant respectfully traverses the rejection.

RELEVANT LAW

The test of enablement is whether one skilled in the art can make and use what is claimed based upon the disclosure in the application and information known to those of skill in the art without undue experimentation. *United States v. Telectronics, Inc.*, 8 USPQ2d 1217 (Fed. Cir. 1988). A certain amount of experimentation is permissible as long as it is not undue. To satisfy the enablement requirement of 35 U.S.C § 112, first paragraph, the specification must teach one of skill in the art to make and use the invention without undue experimentation. *Atlas Powder Co. v. E.I. DuPont de Nemours*, 750 F.2d 1569, 224 USPQ 409 (1984). This requirement can be satisfied by providing sufficient disclosure, either through illustrative examples or terminology, to teach one of skill in the art how to make and how to use the claimed subject matter without undue experimentation. This clause does not require "a specific example of everything **within the scope** of a broad claim." *In re Anderson*, 176 USPQ 331, at 333 (CCPA 1973), emphasis in original.

The "invention" referred to in the enablement requirement of section 112 is the claimed subject matter. *Lindemann Maschinen-fabrik v. American Hoist and Derrick Co.*, 730 F.2d 1452, 1463, 221 USPQ 481, 489 (Fed. Cir. 1984) ("The question is whether the disclosure is sufficient to enable those skilled in the art to practice the claimed invention");

Raytheon Co. v. Roper Corp., 724 F.2d 951, 956, 220 USPQ 592, 596 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 835, 225 USPQ 232 (1984).

> As a matter of Patent Office practice, then, a specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as in compliance with the enabling requirement of the first paragraph of § 112 unless there is reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support. Assuming that sufficient reason for such doubt does exist, a rejection for failure to teach how to make and/or use will be proper on that basis; such a rejection can be overcome by suitable proofs indicating that the teaching contained in the specification is truly enabling. . . it is incumbent upon the Patent Office, whenever a rejection on this basis is made, to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with evidence or reasoning which is inconsistent with the contested statement.

Id. (emphasis in original); *See also Fiers v. Revel*, 984 F.2d 1164, 1171-72, 25 USPQ2d 1601, 1607 (Fed. Cir. 1993);, *Gould v. Mossinghoff*, 229 USPQ 1, 13 (D.D.C. 1985), *aff'd in part, vacated in part, and remanded sub nom. Gould v. Quigg*, 822 F.2d 1074, 3 USPQ2d 1302. A patent application need not teach, and preferably omits, what is well known in the art. *Spectra-Physics, Inc. v. Coherent, Inc.*, 3 USPQ2d 1737 (Fed. Cir. 1987).

The inquiry with respect to scope of enablement under 35 U.S.C. § 112, first paragraph, is whether it would require undue experimentation to make and use the subject matter as claimed. A considerable amount of experimentation is permissible, particularly if it is routine experimentation. The amount of experimentation that is permissible depends upon a number of factors, which include: the quantity of experimentation necessary, the amount of direction or guidance presented, the presence or absence of working examples, the nature of the invention, the state of the prior art, the relative skill of those in the art, the predictability of the art, and the breadth of the claims. *Ex parte Forman*, 230 USPQ 546 (Bd. Pat. App. & Int'f 1986); *see also In re Wands*, 8 USPQ2d 1400 (Fed. Cir. 1988).

The starting point in an evaluation of whether the enablement requirement is satisfied is an analysis of each claim to determine its scope. The focus of the inquiry is whether everything within the scope of the claim is enabled. As concerns the breadth of a claim relevant to enablement, the only relevant concern should be whether the scope of enablement provided to one skilled in the art by the disclosure is commensurate with the scope of protection sought by the claims. *In re Moore*, 439 F.2d 1232, 169 USPQ 236 (CCPA 1971). Once the scope of the claims is addressed, a determination must be made as to whether one

skilled in the art is enabled to make and use the entire scope of the claimed invention without undue experimentation.

The requirements of 35 USC §112, first paragraph, can be fulfilled by the use of illustrative examples or by broad terminology. *In re Anderson*, 176 USPQ 331, 333 (CCPA 1973):

> ... we do not regard section 112, first paragraph, as requiring a specific example of everything within the scope of a broad claim .... What the Patent Office is here apparently attempting is to limit all claims to the specific examples, not withstanding the disclosure of a broader invention. This it may not do.

In re Grimme, Keil and Schmitz, 124 USPQ 449, 502 (CCPA 1960) :

> It is manifestly impracticable for an applicant who discloses a generic invention to give an example of every species falling within it, or even to name every such species. It is sufficient if the disclosure teaches those skilled in the art what the invention is and how to practice it.

ANALYSIS

The Office Action fails to establish a prima facie case of lack of enablement pursuant to 35 U.S.C. § 112, first paragraph.

The test of enablement is not whether an example of everything within the scope of the claims is provided in the specification. The test of enablement is whether one skilled in the art can make and use what is claimed based upon the disclosure in the application and information known to those of skill in the art without undue experimentation. *United States v. Telectronics, Inc.*, 8 USPQ2d 1217 (Fed. Cir. 1988). A certain amount of experimentation is permissible as long as it is not undue.

In the previous Action, the Examiner stated that the amount of direction provided is limited to the chemical synthesis of numerous [1,4]oxazino[2,3-*f*]quinolin-8-ones and data identifying which compounds are agonists or antagonists and alleges that no other chemical species has been disclosed as having been synthesized, isolated or subjected to any testing to determine possible medicinal activity. Applicant respectfully disagrees.

The specification teaches seven generic synthesis schemes (for example, see page 33, 35, 37, 38, 39, 41 and 42). The application names over 150 exemplary AR modulator compounds (for example, see page 29 through 32 and claims 56 and 57). The specification also provides over 50 working examples and two screening assays. It is respectfully submitted that the direction provided by the specification is sufficient to allow one of skill in the art to synthesize, test and administer any and all compounds of the claimed subject matter. One skilled in the art will recognize that the generic schemes may be used to synthesize such

compounds, though they also may be synthesized using other techniques known to those of skill in the art. Similarly, one of skill in the art may assess certain compounds of the present invention using the binding assay or the co-transfection assay, both of which are disclosed in the specification, though one of skill in the art may assess compounds using other known assays. Finally, administration of compounds is routine to one of skill in the medical arts.

Notwithstanding this, solely to expedite prosecution of this application, applicant has amended claims 1 and 58 to cancel formulae II, III, and IV, along with certain R-group substituents, without prejudice or disclaimer. Applicant asserts that the cancelled subject matter is fully enabled by the specification, as discussed above, in the traverse of the enablement rejection below and in the previous Response, and applicant reserves the right to pursue such subject matter in a continuing application.

REBUTTAL TO THE EXAMINER'S ARGUMENTS

Within the "scope" rejection under 35 U.S.C. § 112, first paragraph, the Examiner suggests that "the term 'optionally substituted' should be specifically defined in the independent claims (claims 1 and 58)" Office Action at page 4 (emphasis in original); and again at page 7. Applicant respectfully submits that this rejection appears to be more appropriate under 35 U.S.C. § 112, second paragraph, where it also has been raised by the Examiner. Accordingly, this issue will be addressed more fully in the traverse under 35 U.S.C. § 112, second paragraph, below.

Applicant respectfully disagrees with the Examiner's explanation that "[a]nyone reading the original or the amended claims or both would not have otherwise known that 'hydroxyl' was an 'optional substituent.'" *Id.* Claims must be read in view of the specification. See e.g., MPEP § 2106 ("An applicant is entitled to be his or her own lexicographer, and in many instances will provide an explicit definition for certain terms used in the claims. Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim."); MPEP § 608.01(o) ("The meaning of every term used in any of the claims should be apparent from the descriptive portion of the specification"); MPEP § 2173.05 ("When the specification states the meaning that a term in the claims is intended to have, the claim is examined using that meaning in order to achieve a complete exploration of the applicant's invention and its relation to the prior art."). The term "optionally substituted" is expressly defined in the specification. Thus, that definition will control interpretation of the term as it is used in the claim. Reciting the definition in the claims is unnecessary.

REJECTION OF CLAIMS 1-55, 58-77 AND 80-107 UNDER 35 U.S.C. § 112, FIRST PARAGRAPH – ENABLEMENT

The Examiner separately rejects claims 1-55, 58-77, and 80-107 as allegedly not enabled. The Examiner identifies the *In re Wands* factors, which Applicants previously discussed in Response to the February Action, the content of which is repeated here by incorporation by reference. These factors will now be considered again.

As a preliminary matter, claims 80-107 are cancelled herein without prejudice or disclaimer. Applicant does not acquiesce to the rejection. The claims are cancelled in order to advance this application to allowance. Applicant reserves the right to pursue these claims in a continuing application.

ANALYSIS

Applying the above-noted factors to the instant facts reveals that the amount of experimentation is not undue.

1. The scope of the claims.

Claim 1 is directed to compounds of formula I and claims 2-57 ultimately depend from claim 1 and are directed to various embodiments thereof. Claim 58 is directed to pharmaceutical compositions including a pharmaceutically acceptable carrier and a compound of formula I, and claims 59-77 ultimately depend from claim 58 and are directed to various embodiments thereof.

The Examiner alleges that the "breadth of the compound claims is excessive," asserting that "the term 'may be optionally substituted' without specifying the substituents implied thereby renders the breadth excessive because said term implies that the unnamed substituents is/are open to all possible alternatives" (Office Action at page 5). Applicant respectfully points out that the term "optionally substituted" is defined in the specification at page 11 line 26 to page 12, line 9, which states:

> "Optionally substituted" groups may be substituted or unsubstituted. The substituents of an "optionally substituted" group may include, without limitation, one or more substituents independently selected from the following groups or designated subsets thereof: alkyl, alkenyl, alkynyl, heteroalkyl, haloalkyl, haloalkenyl, haloalkynyl, cycloalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkoxy, aryloxy, haloalkoxy, amino, alkylamino, dialkylamino, alkylthio, arylthio, heteroarylthio, oxo, carboxyesters, carboxamido, acyloxy, hydrogen, F, Cl, Br, I, CN, NO_2, NH_2, N_3, $NHCH_3$, $N(CH_3)_2$, SH, SCH_3, OH, OCH_3, OCF_3, CH_3, CF_3, $C(O)CH_3$, CO_2CH_3, CO_2H, $C(O)NH_2$, OR^9, SR^9 and $NR^{10}R^{11}$. An optionally substituted group may be unsubstituted (e.g., $-CH_2CH_3$), fully substituted (e.g., $-CF_2CF_3$), monosubstituted (e.g., $-CH_2CH_2F$) or substituted at a level anywhere in-between fully substituted and monosubstututed (e.g., $-CH_2CF_3$).

Thus, the recitation does not imply "that the unnamed substituents is/are open to all possible alternatives" as the Examiner asserts. The substituents include only those in the definition of the term.

B. Nature of the Invention

As amended, the claimed subject matter is directed to compounds of Formula I and pharmaceutical compositions that include compounds of Formula I. Claims 1-55 and 58-76 are directed to compounds as defined in the claims and to pharmaceutical compositions thereof.

C. State of the Art

The art of record shows that the skilled artisan can make and use the compounds of the present invention. In the present Action, the Examiner alleges that certain references are anticipatory prior art (Action at page 5) and other art is "very close" (Action at page 8). Although applicant traverses the art rejection below, applicant agrees that the prior art is replete with references that show that the skilled artisan can use known organic synthesis scheme and reactions to produce various bicyclic, tricyclic and polycyclic organic compounds, including, for example, quinolines, quinolinones, coumarins, benzoxyzins, oxazolidines, azasteroids, progesterones, azachlormadinones, anthrasteroids, flutamides and phthalimides. The Examiner asserts that "The state of the prior art is defined by the prior art presently cited by applicant and by examiner." Applicant is not aware of that definition and respectfully requests that the Examiner cite authority.

D. Level of Skill in the Art

The Examiner states that the skill in the art of chemical synthesis is high. Applicant agrees with this assessment. That skill, together with the instant specification and the known art, allow the skilled artisan to make any and all of the claimed compounds. Therefore, the amount of disclosure required to meet the enablement requirement is minimal.

The Examiner notes that "the level of skill in the medicinal arts is moderate because it is unclear which if any of the compounds disclosed herein are active against one or more specific disease conditions." Office Action at page 5. Applicant respectfully disagrees. The level of skill in the medical arts is high. This is evidenced by the art in this area, which is authored primarily by those with Ph.D. and M.D. degrees and is intended for an audience of similarly highly skilled individuals, primarily in the fields of biochemical, pharmaceutical, or medical arts. The numerous articles and patents made of record in this application, authored and reviewed by those known in the art, address a highly skilled audience, and further

evidence the high level of skill in this art. Therefore, the amount of disclosure required to meet the enablement requirement is minimal.

E. Level of Pedictability

The art of chemical synthesis is predictable and is dictated by recognized chemical reactions and constraints. The medical arts are also predictable, in that various assays and models that mimic an *in vivo* system in the laboratory were available and known to the skilled artisan at the time of filing of the application. For example, see U.S. Pat. No. 5,071,773 to Evans *et al.* (1991), which teaches a bioassay for evaluating whether compounds are functional ligands for receptor proteins. Such assays are routine in the medical arts. Thus, it is not necessary that one skilled in the art be able to predict which compound will be most active for a particular medical application. The specification, in view of the skill in the art, describes how to make and administer, and if necessary test, any claimed compound. As discussed above, the level of knowledge and skill in the preparation, isolation and manipulation of compounds was high as of the filing date of the instant application. Thus, in view of the teachings of the specification, in combination with what was known at the time the original application was filed, applicant respectfully submits that the claimed compounds can be prepared predictably using any methods disclosed in the specification or that are known to those skilled in this art. Further, formulating such compounds into a pharmaceutical composition and administration of such compositions to a subject is well know in the medical arts. Thus, preparation and administration of pharmaceutical compounds is also predictable.

F. Amount of Direction Provided

The Examiner alleges that the direction provide by the specification is limited to the chemical syntheses of [1,4]oxazino[2,3-*f*]-quinolin-8-ones and providing data identifying which compounds are antagonists and which are agonists of known androgen receptors. Applicant respectfully disagrees. The specification provides a general description of non-steroidal compounds that are high-affinity, high-specificity agonists, partial agonists (i.e., partial activators and/or tissue-specific activators) and antagonists for androgen receptors. The application discloses compounds, pharmaceutical compositions containing such compounds and methods of using such compounds and pharmaceutical compositions for modulating processes mediated by steroid receptors. The application names over 150 exemplary compounds (for example, see page 29 through 32 and claims 56 and 57). The application also discloses methods of making such compounds as well as intermediates used in their synthesis, providing seven generic synthesis schemes (for example, see page 33, 35,

37, 38, 39, 41 and 42). One of skill in the art can readily follow these schemes or known variations of such schemes with any of a vast number of commonly available starting materials to arrive at the full scope of the claimed subject matter.

G. Working Examples

The specification provides synthesis schemes and over 50 working examples directed to chemical methods of preparing compounds within the scope of the claims. The application names over 150 exemplary compounds. The specification also provides biological examples for testing and using the compounds, including the co-transfection assay and binding assay and results of analysis of exemplary compounds.

Hence the specification provides a variety of examples of compounds that fall within the scope of the claims evidencing that the claimed compounds function as claimed. The specification also provides two screening assays. As discussed above, various screening assays for assessing the ability of a compound or composition to modulate the transcriptional ability of intracellular receptors are known to those of skill in the art, such as those described in U.S. Pat. Nos. 4,981,784, 5,071,773, 5,298,429, and 5,506,102 and in WO89/05355, WO91/06677, WO92/05447, WO93/11235, WO93/23431, WO94/23068, WO95/18380 and CA 2,034,220. The requirements of 35 U.S.C. §112, first paragraph, do not require a specific example of everything within the scope of the claims. *In re Anderson*, 176 USPQ 331, 333 (CCPA 1973).

H. Quantity of Experimentation Required

The direction provided by the specification is sufficient to allow one of skill in the art to synthesize, test and administer any and all compounds of the invention as claimed. One skilled in the art will recognize that the generic schemes may be used to synthesize such compounds, though they also may be synthesized using techniques known to those of skill in the art. Similarly, one of skill in the art may assess certain compounds of the present invention using the binding assay or the co-transfection assay, both of which are disclosed in the specification, though one of skill in the art may assess compounds using other known assays. Finally, administration of compounds is routine to one of skill in the medical arts.

The Examiner states, "the quantity of experimentation needed to make or use the invention based on the content of the disclosure is deemed to be excessive because the instant specification only discloses how to make compounds with a [1,4]oxazino[2.3-*f*]isoquinolin-8-one ring system . . ." Office Action at page 5. Applicant respectfully disagrees. The generic synthesis schemes provided in the specification enable one of skill in the art to prepare far more

compounds than the Examiner admits. There is nothing of record to suggest that the synthesis of any of the claimed compounds or compositions would require development of new procedures or excessive experimentation. Organic synthesis methods have been used for decades. Those of skill in the art, provided the synthesis schemes in the specification and known in the art, can readily synthesize compounds encompassed by the claims using routine experimentation and available starting materials.

As discussed above, bioassays for evaluating whether compounds are functional ligands for receptor proteins were known in the art since at least 1991. Such assays are routine in this art and do not require excessive experimentation. It is noted that the test for undue experimentation "is not merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine . . ." *In re Wands* 858 F.3d 731, 737 (Fed Cir. 1988). Thus, methods for making and evaluating androgen receptor modulator compounds were available and known to skilled artisans at the time of filing the application. Those skills, together with the teaching of the specification, including cited and incorporated references, allow the skilled artisan to make any and all of the claimed compounds. As discussed previously, it is not necessary that one skilled in the art be able to predict which compound will be most active for a particular medical application. The specification, in view of the skill in the art, enables one to make and administer, and if necessary test, any claimed compound.

CONCLUSION

In light of the scope of the claims, the teachings in the specification, the high level of skill of those in this art, the working examples, and the extensive knowledge of those of skill in this art, it would not require undue experimentation for a person skilled in the art to make and use the claimed compounds and compositions. Accordingly, the applicant respectfully submits that all of the claims are fully enabled by the specification in view of the state of the art at the time of filing. Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. § 112, first paragraph.

Policy Considerations

The Examiner is reminded that applicant is entitled to claims that are commensurate in scope not only with what applicant has specifically exemplified, but commensurate in scope with that which one of skill in the art could obtain by virtue of that which the applicant has disclosed. Moreover, it is unfair, unduly limiting and contrary to the public policy and constitutional mandate that underlie the U.S. patent system to require applicant to limit the instant claims to the compounds specifically discussed in the examples. To do so permits one of skill in this art to

practice the disclosed invention but avoid liability for infringement merely by selecting a species of the disclosed genus not specifically discussed in the examples.

As a broad body of knowledge is available in the area of chemical, it would be unfair, unduly limiting and contrary to the public policy upon which the patent laws are based to require Applicant to limit these claims to the particular exemplary embodiments. See, e.g., *In re Goffe*, 542 F.2d 801, 166 USPQ 85 (CCPA 1970):

> for the Board to limit appellant to claims involving the specific materials disclosed in the examples so that a competitor seeking to avoid infringing the claims can merely follow the disclosure and make routine substitutions "is contrary to the purpose for which the patent system exists - to promote progress in the useful arts".
>
> The public purpose on which the patent law rests requires the granting of claims commensurate in scope with the invention disclosed. This requires as much the granting of broad claims on broad inventions as it does the granting of more specific claims on more specific inventions. *In re Sus and Schafer*, 49 CCPA 1301, 306 F.2d 494, 134 USPQ 301, at 304.

To require applicant to further limit the claims would permit those of skill in the art to practice what is disclosed in the specification but avoid infringing claims so-limited. To permit that is simply not fair. The instant application in light of the knowledge of those of skill in the art provides adequate guidance for making and using androgen receptor modulator compounds and compositions. Having done so, it is now routine for others to make minor modifications by any method known in this art. Those of skill in the art should not be permitted to make minor modifications, such as selecting a compound not specifically disclosed in the examples, to avoid infringing such claims.

REBUTTAL TO EXAMINER'S ARGUMENTS

Claims 85, 89, 93, 101 and 107

Beginning at page 7 of the Office Action, the Examiner discusses some remarks made by applicants in the previous Response. In that discussion, the Examiner appears to reject claims 85, 89, 93, 101 and 107 on additional grounds. Applicants do not acquiesce to any of these grounds. However, since claims 80-107 are cancelled without prejudice or disclaimer, Applicants do not address these additional grounds, but reserve the right to pursue these claims in a continuing application.

"Compound and Pharmaceutical Composition Claims"

The Examiner alleges certain generalities regarding the "compound and pharmaceutical composition claims" (see Office Action at page 8). The Examiner asserts that

certain unidentified terms (aryl, arylalkyl, heteroaryl, etc.) are allegedly incompletely defined and "typically" possess any of a number of alleged flaws selected from among:

i) lack any upper bounds as to size,
and when heteroatoms are suggests said terms
ii) fail to define which hetero atoms are to be selected from
iii) the number of said heteroatoms, or
iv) the location(s) or the ring system(s) containing said heteroatom(s) and
v) because a proper definition of "optionally substituted" is not present in any independent claim.

The Examiner did not identify all of the claims against which this "enablement rejection" is applied, nor to which terms of the claims the rejection is applied. Applicant requests that the Examiner more fully articulate the rejection so that the applicant can be fully responsive. In order to advance the prosecution of this application, applicant provides the following traverse.

The terms identified by the Examiner are specifically defined in the specification. For example, the definition for "aryl" is recited on page 9,line 26 through page 10, line 5, which recites:

> The term "aryl," alone or in combination, refers to an optionally substituted aromatic ring system. The term aryl includes monocyclic aromatic rings, polyaromatic rings and polycyclic aromatic ring systems containing from six to about twenty carbon atoms. The term aryl also includes monocyclic aromatic rings, polyaromatic rings and polycyclic ring systems containing from 6 to about 12 carbon atoms, as well as those containing from 6 to about 10 carbon atoms. The polyaromatic and polycyclic aromatic rings systems may contain from two to four rings. Examples of aryl groups include, without limitation, phenyl, biphenyl, naphthyl and anthryl ring systems.

The definition for "arylalkyl" is recited on page 11, lines 9-11, which recites:

> The term "arylalkyl," alone or in combination, refers to an alkyl radical as defined above in which one hydrogen atom is replaced by an aryl radical as defined above, such as, for example, benzyl, 2-phenylethyl and the like.

The definition for "heteroaryl" is recited on page 10, lines 6-19, which recites:

> The term "heteroaryl" refers to optionally substituted aromatic ring systems containing from about five to about 20 skeletal ring atoms and having one or more heteroatoms such as, for example, oxygen, nitrogen and sulfur. The term heteroaryl also includes optionally substituted aromatic ring systems having from 5 to about 12 skeletal ring atoms, as well as those having from 5 to about 10 skeletal ring atoms. The term heteroaryl may include five- or six-membered heterocyclic rings, polycyclic heteroaromatic ring systems and polyhetero-aromatic ring systems where the ring system has two, three or four rings. The terms heterocyclic, polycyclic heteroaromatic and polyheteroaromatic include ring systems containing optionally substituted heteroaromatic rings having more than one heteroatom as described above (e.g., a six membered ring with two

> nitrogens), including polyheterocyclic ring systems of from two to four rings. The term heteroaryl includes ring systems such as, for example, furanyl, benzofuranyl, chromenyl, pyridyl, pyrrolyl, indolyl, quinolinyl, N-alkyl pyrrolyl, pyridyl-N-oxide, pyrimidoyl, pyrazinyl, imidazolyl, pyrazolyl, oxazolyl, benzothiophenyl, purinyl, indolizinyl, thienyl and the like.

Applicant respectfully points out that the term "optionally substituted" is defined in the specification at page 11, line 26 to page 12, line 9, which states:

> "Optionally substituted" groups may be substituted or unsubstituted. The substituents of an "optionally substituted" group may include, without limitation, one or more substituents independently selected from the following groups or designated subsets thereof: alkyl, alkenyl, alkynyl, heteroalkyl, haloalkyl, haloalkenyl, haloalkynyl, cycloalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkoxy, aryloxy, haloalkoxy, amino, alkylamino, dialkylamino, alkylthio, arylthio, heteroarylthio, oxo, carboxyesters, carboxamido, acyloxy, hydrogen, F, Cl, Br, I, CN, NO_2, NH_2, N_3, $NHCH_3$, $N(CH_3)_2$, SH, SCH_3, OH, OCH_3, OCF_3, CH_3, CF_3, $C(O)CH_3$, CO_2CH_3, CO_2H, $C(O)NH_2$, OR^9, SR^9 and $NR^{10}R^{11}$. An optionally substituted group may be unsubstituted (e.g., $-CH_2CH_3$), fully substituted (e.g., $-CF_2CF_3$), monosubstituted (e.g., $-CH_2CH_2F$) or substituted at a level anywhere in-between fully substituted and monosubstututed (e.g., $-CH_2CF_3$).

As discussed in more detail below in the traverse of the rejection under 35 U.S.C. § 112, second paragraph, where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim. The claims are read in light of the specification, and the meaning of every term used in any of the claims should be apparent from the descriptive portion of the specification.

Applicants respectfully request that the Examiner reconsider and withdraw this rejection or, in the alternative, identify which claims and terms are subject to this rejection to afford the applicant an opportunity to properly respond with particularity.

REJECTION OF CLAIMS 1-7, 9, 11-18, 20, 21, 23-36, 39, 41, 45, 49-51, 56-58, 60-74, 76, 77 UNDER 35 U.S.C. §112, SECOND PARAGRAPH

Claims 1-7, 9, 11-18, 20, 21, 23-36, 39, 41, 45, 49-51, 56-58, 60-74, 76, 77 and 86-107 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention because the Examiner alleges that the recitation "selected from the group of" is incomplete because Markush groups are properly formulated to recite "selected from the group consisting of" (Office Action at page 6).

The rejection is obviated by the amendment of claims 1-7, 9, 11-18, 20, 21, 23-36, 39, 41, 45, 49-51, 56-58, 60-74, 76, 77 and 86-107 herein.

REJECTION OF CLAIMS 1-7, 9, 11-18, 20, 21, 23-36, 39, 41, 45, 49-51, 56-58, 60-74, 76, 77 and 86-107 UNDER 35 U.S.C. §112, SECOND PARAGRAPH

Claims 1-7, 9, 11-18, 20, 21, 23-36, 39, 41, 45, 49-51, 56-58, 60-74, 76, 77 and 86-107 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention because the Examiner alleges that the recitation "optionally substituted" fails "to specify the substituents implied thereby" (Office Action at pages 9). The Examiner admits that the definition for the recitation "optionally substituted" is found within the specification but states that he "fails to understand why this definition is not found in the independent claims" (Office Action at page 7). The Examiner further alleges that the definition "does not meet the requirements of the statute because for a number of reasons said definition fails to have adequately defined metes and bounds (35 USC §112, 2nd ¶)."

Applicant respectfully traverses the rejection. The term "optionally substituted" is defined in the specification at page 11, line 26 to page 12, line 9, which states:

> "Optionally substituted" groups may be substituted or unsubstituted. The substituents of an "optionally substituted" group may include, without limitation, one or more substituents independently selected from the following groups or designated subsets thereof: alkyl, alkenyl, alkynyl, heteroalkyl, haloalkyl, haloalkenyl, haloalkynyl, cycloalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkoxy, aryloxy, haloalkoxy, amino, alkylamino, dialkylamino, alkylthio, arylthio, heteroarylthio, oxo, carboxyesters, carboxamido, acyloxy, hydrogen, F, Cl, Br, I, CN, NO_2, NH_2, N_3, $NHCH_3$, $N(CH_3)_2$, SH, SCH_3, OH, OCH_3, OCF_3, CH_3, CF_3, $C(O)CH_3$, CO_2CH_3, CO_2H, $C(O)NH_2$, OR^9, SR^9 and $NR^{10}R^{11}$. An optionally substituted group may be unsubstituted (e.g., $-CH_2CH_3$), fully substituted (e.g., $-CF_2CF_3$), monosubstituted (e.g., $-CH_2CH_2F$) or substituted at a level anywhere in-between fully substituted and monosubstituted (e.g., $-CH_2CF_3$).

Thus, the recitation "optionally substituted" does not imply "that the unnamed substituents is/are open to all possible alternatives" as alleged by the Examiner. As discussed above, claims must be read in view of the specification. See e.g., MPEP § 2106 ("An applicant is entitled to be his or her own lexicographer, and in many instances will provide an explicit definition for certain terms used in the claims. Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim."); MPEP § 608.01(o) ("The meaning of every term used in any of the claims should be apparent from the descriptive portion of the specification"); MPEP § 2173.05 ("When the specification states the meaning that a term in the claims is intended to have, the claim is examined using that meaning in order to achieve a complete exploration of the applicant's

invention and its relation to the prior art."). The term "optionally substituted" is expressly defined in the specification. Thus, reciting that definition in the claims is not necessary.

Furthermore, the USPTO recognizes the use of this term in patent claims. A search of the USPTO database for the time period 1976 to present for patents with the recitation "optionally substituted" in the claims yielded 22,359 patents. While applicant realizes that the prosecution history of one patent is not relevant to another, the widespread use of the recitation "optionally substituted" in claims evidences that one of skill in the art understands the meaning of this term.

The Examiner alleges that "for a number of reasons" the definition in the specification allegedly "does not meet the requirements of the statute" or "fails to have adequately defined metes and bounds (35 USC §112, 2nd ¶)" (Office Action at page 7). The Examiner does not provide an explanation of these "number of reasons." Applicant respectfully requests that the Examiner withdraw the rejection or, in the alternative, more fully articulate the "number of reasons" so that applicant is afforded the opportunity to more fully address the issue.

REJECTION OF CLAIMS 1 and 58 UNDER 35 U.S.C. §112, SECOND PARAGRAPH

Claims 1-7, 9, 11-18, 20, 21, 23-36, 39, 41, 45, 49-51, 56-58, 60-74, 76, 77 and 86-107 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention because the Examiner alleges that claiming " 'C_1-C_8 heteroalkyl' and 'OR^9' are directed to substantially overlapping subject matter; i.e., the latter is entirely encompassed by the former." Applicant respectfully traverses the rejection. According to the MPEP:

> [T]he double inclusion of an element by members of a Markush group is not, in itself sufficient basis for objection to or rejection of claims. . . . For example, the Markush group, 'selected from the group consisting of amino, halogen, nitro, chloro and alkyl' should be acceptable even though 'halogen' is generic to 'chloro.'"

MPEP, § 2173.05(h). Thus even if OR^9 were, as the Examiner asserts, "completely encompassed" by the term "C_1-C_8 heteroalkyl," a rejection on that basis would be improper. Moreover, "OR^9" is not, in fact, completely encompassed by "C_1-C_8 heteroalkyl." By way of non-limiting example, R^9 may be hydrogen. Thus, OR^9 may be OH, which is not a C_1-C_8 heteroalkyl. Applicants respectfully submit that this rejection is improper, both legally and factually, and should be withdrawn.

REJECTION OF CLAIMS 87-107 UNDER 35 U.S.C. §112, SECOND PARAGRAPH

Claims 87-107 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention because the Examiner alleges that the term "modulate" is "indefinite for failing to indicate what specific treatment action(s) or effect(s) is(are) intended."

Without a acquiescing to the Examiner's allegation and solely to expedite prosecution, claims 87-107 are cancelled herein without prejudice or disclaimer. Thus, the rejection as applied to claims 87-107 under 35 U.S. C. § 102 is moot.

REJECTION OF CLAIMS 1-7, 12-14, 16-18, 20-26, 32-34, 37, 41-46, 49-53, 58-62, 64-70, 73, 75 and 77 UNDER 35 U.S.C. §102(b)

Claims 1-7, 12-14, 16-18, 20-26, 32-34, 37, 41-46, 49-53, 58-62, 64-70, 73, 75 and 77 are rejected under 35 U.S.C. § 102(b) as anticipated by Kyotani *et al.* because Kyotani *et al.* allegedly discloses compounds that include all the limitations of the claimed subject matter. The Examiner alleges that the instant claims are anticipated by compounds of structure "(1e)" at column 3 in the reference.

This rejection is respectfully traversed.

RELEVANT LAW

Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. *In re Spada*, 15 USPQ2d 1655 (Fed. Cir, 1990), *In re Bond*, 15 USPQ 1566 (Fed. Cir. 1990), *Soundscriber Corp. v. U.S.*, 360 F.2d 954, 148 USPQ 298, 301, adopted 149 USPQ 640 (Ct. Cl.) 1966. *See, also, Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913,1920 (Fed. Cir.), *cert. denied*, 110 S.Ct. 154 (1989). "[A]ll limitations in the claims must be found in the reference, since the claims measure the invention." *In re Lang*, 644 F.2d 856, 862, 209 USPQ 288, 293 (CCPA 1981). Moreover it is incumbent on the Examiner to identify wherein each and every facet of the claimed invention is disclosed in the reference. *Lindemann Maschinen-fabrik Gmbh v. American Hoist and Derrick Co.*, 730 F.2d 1452, 221 USPQ 481 (Fed. Cir. 1984). Further, the reference must describe the invention as claimed sufficiently to have placed a person of ordinary skill in the art in possession of the invention. An inherent property has to flow naturally from what is taught in a reference. *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981).

THE CLAIMS

Claim 1 is directed to compounds of formula (I), where W is $S(O)_n$, NH, $N\{R^{13}\}$, $N\{C(Y)R^{11}$ or $N\{SO_2R^{11}\}$, X and Z each independently is O, NH, $N\{R^{11}\}$, $N\{C(Y)R^{11}\}$,

$N\{SO_2R^{12}\}$ or $N\{S(O)R^{12}\}$, and Y is O. Claims 2-31, 37-42, 45, 46, 49-51 and 61 depend from claim 1. Claim 58 is directed to pharmaceutical compositions that includes a pharmaceutically acceptable carrier and a compound of formula (I), where W is $S(O)_n$, NH, $N\{R^{13}\}$, $N\{C(Y)R^{11}$ or $N\{SO_2R^{11}\}$, X and Z each independently is O, NH, $N\{R^{11}\}$, $N\{C(Y)R^{11}\}$, $N\{SO_2R^{12}\}$ or $N\{S(O)R^{12}\}$, and Y is O. Claims 59, 60, 62-72 and 75-77 depend from claim 58.

Disclosure of Kyotani *et al.* (US 5,576,324)

Kyotani *et al.* discloses quinolinone derivatives and medicinally acceptable salts thereof that have positive inotropic action, antiarrhythmic action and vasodilating action. Kyotani *et al.* discloses compounds of formula (1e), where the 6 position of the quinolinone core structure contains an oxygen substituent.

Differences between Kyotani *et al* and the Claimed Subject Matter

The 6 position of the core structure in formula (1e) corresponds to W in formula (I) in instant claims 1 and 58. Formula (1e) of Kyotani *et al.* does not contain $S(O)_n$, NH, $N\{R^{13}\}$, $N\{C(Y)R^{11}$ or $N\{SO_2R^{11}\}$ in the 6 position of the quinolinone core structure. Thus, Kyotani *et al.* does not disclose compounds of formula (I), where W is $S(O)_n$, NH, $N\{R^{13}\}$, $N\{C(Y)R^{11}$ or $N\{SO_2R^{11}\}$. Absent such a disclosure, Kyotani *et al.* does not disclose every element of the claimed subject matter, and thus does not anticipate claims 1 and 58. Thus, claims 2-31, 37-42, 45, 46, 49-51 and 61, which depend from claim 1, and claims 59, 60, 62-72 and 75-77, which depend from claim 58, are not anticipated by Kyotani *et al.* Reconsideration and withdrawal of the rejection are respectfully requested.

REJECTION OF CLAIMS 1-7, 9, 11-14, 16-18, 20, 25-28, 32-34, 37, 38, 41, 42, 45, 46, 49, 52, 53, 58-62, 64-70 and 76 UNDER 35 U.S.C. §102(b)

Claims 1-7, 9, 11-14, 16-18, 20, 25-28, 32-34, 37, 38, 41, 42, 45, 46, 49, 52, 53, 58-62, 64-70 and 76 are rejected under 35 U.S.C. § 102(b) as anticipated by LaMontagne *et al.* because LaMontagne *et al.* allegedly discloses compounds that include all the limitations of the claimed subject matter. The Examiner alleges that the instant claims are anticipated by structures 4k-4k on page 965, compounds 2d and 2e on page 966, compounds 3f-3g on page 966 and compounds 4h-4k on page 967 of LaMontagne *et al.*.

This rejection is respectfully traversed.

RELEVANT LAW

See related section above.

THE CLAIMS

See related section above.

Disclosure of LaMontagne *et al.*

LaMontagne *et al.* discloses the synthesis and biological activity of 5-alkoxy analogues of 4-methylprimaquine. The compounds disclosed by LaMontagne *et al.* are substituted quinolines.

Differences between LaMontagne *et al.* and the Claimed Subject Matter

Formula (I) of claims 1 and 58 does not encompass quinoline compounds. LaMontagne *et al.* does not disclose compounds of formula (I). Absent such a disclosure, LaMontagne *et al.* does not disclose every element of the claimed subject matter and therefore does not anticipate claims 1 and 58. Claims 2-31, 37-42, 45, 46, 49-51 and 61 depend from claim 1, and claims 59, 60, 62-72 and 75-77 depend from claim 58. Hence, LaMontagne *et al.* does not anticipate any of claims 1-7, 9, 11-14, 16-18, 20, 25-28, 32-34, 37, 38, 41, 42, 45, 46, 49, 52, 53, 58-62, 64-70 and 76. Reconsideration and withdrawal of the rejection are respectfully requested.

REJECTION OF CLAIMS 1-7, 9, 11-14, 16-18, 20, 21, 37, 38, 41-45, 49, 52, 58-68, 70, 75 and 77 UNDER 35 U.S.C. §102(b)

Claims 1-7, 9, 11-14, 16-18, 20, 21, 37, 38, 41-45, 49, 52, 58-68, 70, 75 and 77 are rejected under 35 U.S.C. § 102(b) as anticipated by Debenedetti *et al.* because the reference allegedly discloses compounds that include all the limitations of the claimed subject matter. The Examiner alleges that the instant claims are anticipated by compounds 1 and 3 on page 701 of Debenedetti *et al.* This rejection is respectfully traversed.

RELEVANT LAW

See related section above.

THE CLAIMS

See related section above.

Disclosure of Debenedetti *et al.*

Debenedetti *et al.* discloses three 5,6,7-trioxygenated coumarins that are isolated from the aerial parts of *Pterocaulon virgatum*(L.) DC. and *Pterocaulon purpurascens* Malme. Specifically, Debenedetti *et al.* discloses isopurpurasol (compound **1**), its regiosomer (compound **3**) and purpuraol (compound **2**).

Differences between Debenedetti *et al.* and the Claimed Subject Matter

The three compounds disclosed by Debenedetti *et al.* contain an oxygen substituent at the 6 position of the coumarin core structure, which corresponds to W in instant formula (I). The compounds disclosed by Debenedetti *et al.* do not contain $S(O)_n$, NH, $N\{R^{13}\}$,

$N\{C(Y)R^{11}$ or $N\{SO_2R^{11}\}$ in the 6 position of the coumarin core structure. Thus Debenedetti *et al.* does not disclose compounds of formula (I) where W is $S(O)_n$, NH, $N\{R^{13}\}$, $N\{C(Y)R^{11}$ or $N\{SO_2R^{11}\}$. Absent such a disclosure, Debenedetti *et al.* does not disclose every element of the claimed subject matter and thus does not anticipate claim 1 or claim 58. Claims 2-31, 37-42, 45, 46, 49-51 and 61 depend from claim 1, and claims 59, 60, 62-72 and 75-77 depend from claim 58. Because Debenedetti *et al.* does not anticipate claims 1 or 58, Debenedetti *et al.* does not anticipate any of claims 1-7, 9, 11-14, 16-18, 20, 21, 37, 38, 41-45, 49, 52, 58-68, 70, 75 and 77. Reconsideration and removal of the rejection are respectfully requested.

REJECTION OF CLAIMS 1-7, 12-14, 16-18, 20, 21, 23, 24, 37, 41-45, 49, 50, 52, 58-62, 64-68, 70, 73, 75 and 77 UNDER 35 U.S.C. §102(b)

Claims 1-7, 12-14, 16-18, 20, 21, 23, 24, 37, 41-45, 49, 50, 52, 58-62, 64-68, 70, 73, 75 and 77 are rejected under 35 U.S.C. § 102(b) as anticipated by Castillo *et al.* because Castillo *et al.* allegedly discloses compounds and pharmaceutical compositions that include all the limitations of the claimed subject matter. This rejection is respectfully traversed.

RELEVANT LAW

See related section above.

THE CLAIMS

See related section above.

Disclosure of Castillo *et al.*

Castillo *et al.* discloses a method for the synthesis of methylenedioxycoumarins. Castillo *et al.* discloses the synthesis and characterization of six methylenedioxycoumarins, namely compounds **3**, **4**, **5**, **6**, **7** and **8**. The Examiner alleges that compound **6** falls within the scope of the instant claims and thus anticipates the claimed subject matter.

Differences between Castillo *et al.* and the claimed Subject Matter

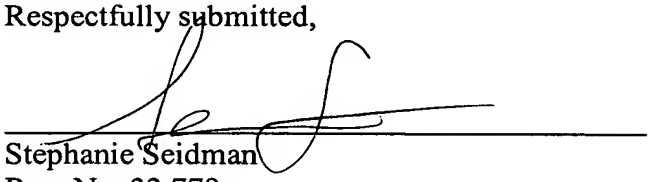
Compound **6** of Castillo *et al.* contains an oxygen substituent at the 6 position of the coumarin core structure, which corresponds to W in formula (I). Compound **6** does not contain $S(O)_n$, NH, $N\{R^{13}\}$, $N\{C(Y)R^{11}$ or $N\{SO_2R^{11}\}$ in the 6 position of the coumarin core structure. Therefore, Castillo *et al.* does not disclose compounds of formula (I), where W is $S(O)_n$, NH, $N\{R^{13}\}$, $N\{C(Y)R^{11}$ or $N\{SO_2R^{11}\}$. Absent such a disclosure, Castillo *et al.* does not disclose every element of claims 1 and 58. Claims 2-31, 37-42, 45, 46, 49-51 and 61 depend from claim 1, and claims 59, 60, 62-72 and 75-77 depend from claim 58. Thus, Castillo *et al.* does not anticipate any of claims 1-7, 12-14, 16-18, 20, 21, 23, 24, 37, 41-45,

49, 50, 52, 58-62, 64-68, 70, 73, 75 and 77. Reconsideration and withdrawal of the rejection and respectfully requested.

* * *

In view of the above, reconsideration and allowance is respectfully requested.

Respectfully submitted,



Stephanie Seidman
Reg. No. 33,779

Attorney Docket No. 18202-018001 (1082)
Address all correspondence to:
20985
Stephanie Seidman
Fish & Richardson P.C.
12390 El Camino Real
San Diego, California 92130
Telephone: (858) 678-5070
Facsimile: (202) 626-7796
email: seidman@fr.com